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**1 Techniques for obtaining high performance in Java programs**


 A small, light blue diamond-shaped icon with a journal page symbol inside.
 Iffat H. Kazi, Howard H. Chen, Berdenia Stanley, David J. Lila  
*September 2000 Computing Surveys (CSUR)*, Volume 32 Issue 3

**Publisher:** ACM 

Full text available: Pdf (816.13 KB)

 Additional Information: [full citation](#), [abstract](#)
**Bibliometrics:** Downloads (6 Weeks): 77, Downloads (12 Months): 487, Downlo

This survey describes research directions in techniques to improve the performance of Java programs written in the Java programming language. The standard technique for Java execution is to generate native code, which limits the extensive portability of programs. ...

**Keywords:** Java, Java virtual machine, bytecode-to-source translators, interpreters, just-in-time compilers

**2 Immutability specification and its applications**

A small, light blue diamond-shaped icon with a journal page symbol inside.
 Igor Pechtchanski, Vivek Sarkar

*November 2002 JGI '02: Proceedings of the 2002 joint ACM-ISCOPE conference*
**Publisher:** ACM

Full text available: Pdf (203.07 KB)

 Additional Information: [full citation](#), [abstract](#)
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A location is said to be *immutable* if its value and the values of selected references to it are guaranteed to remain unchanged during a specified time interval. We introduce the concept of *specification*, and ...

**Keywords:** annotations, immutability, optimization

**3 TotalProf: a fast and accurate retargetable source code profiler**

A small, light blue diamond-shaped icon with a journal page symbol inside.
 Lei Gao, Jia Huang, Jianjiang Ceng, Rainer Leupers, Gerd Ascheid, Heinrich Fink
 October 2009 CODES+ ISSS '09: Proceedings of the 7th IEEE/ACM international conference on codesign and system synthesis

**Publisher:** ACM 

Full text available: Pdf (907.72 KB)

 Additional Information: [full citation](#), [abstract](#)
**Bibliometrics:** Downloads (6 Weeks): 13, Downloads (12 Months): 13, Downlo

Profilers play an important role in software/hardware design, optimizatio

have been proposed to implement profilers. The most widespread approach  
Instruction Set Simulation (ISS) ...

**Keywords:** architecture description language, instruction set simulator  
profiling

**4 A lazy developer approach: building a JVM with third party software**

 Nicolas Geoffray, Gaët Thomas, Charles Clément, Bertil Folliot  
September 2008 **PPPJ '08: Proceedings of the 6th international symposium**  
programming in Java

**Publisher:** ACM

Full text available:  Pdf (737.39 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 6, Downloads (12 Months): 74, Download

The development of a complete Java Virtual Machine (JVM) implementation  
knowledge in different areas: garbage collection, just in time compilation  
structures, etc. The result is ...

**Keywords:** Boehm GC, GNU classpath, Java, JnJVM, LLVM

**5 Survey of code-size reduction methods**

 Árpád Beszédes, Rudolf Ferenc, Tibor Gyimóthy, André Delenc, Konsta Kar

September 2003 **Computing Surveys (CSUR)**, Volume 35 Issue 3

**Publisher:** ACM 

Full text available:  Pdf (443.89 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 36, Downloads (12 Months): 266, Download

Program code compression is an emerging research activity that is having  
such as networking and embedded systems. This is because the reduced  
on network traffic and embedded ...

**Keywords:** code compaction, code compression, method assessment, i

**6 Statistically rigorous java performance evaluation**

 Andy Georges, Dries Buytaert, Lieven Eeckhout  
October 2007 **OOPSLA '07: Proceedings of the 22nd annual ACM SIGPLAN**  
programming systems and applications

**Publisher:** ACM 

Full text available:  Pdf (1.63 MB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 23, Downloads (12 Months): 178, Download

Java performance is far from being trivial to benchmark because it is affected by  
application, its input, the virtual machine, the garbage collector, the heap and  
at run-time causes ...

**Keywords:** benchmarking, data analysis, java, methodology, statistics

Also published in:

October 2007 **SIGPLAN Notices** Volume 42 Issue 10

- 7 Revisiting Out-of-SSA Translation for Correctness, Code Quality and Benoit Boisjoly, Alain Darle, Fabrice Pastelet, Benoit Dupont de Dinechin, March 2009 **CGO '09: Proceedings of the 2009 International Symposium on Computer Architecture**  
**Publisher:** IEEE Computer Society  
Full text available: Pdf (287.20 KB) Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 19, Downloads (12 Months): 80, Downloaded by 10 users

Static single assignment (SSA) form is an intermediate program representation that makes certain optimizations easier to implement. These optimizations can be performed with fast and easy-to-implement algorithms. However, some optimizations create situations where the SSA variables ...

**Keywords:** SSA form, Compilers, JIT-compilation

- 8 Optimizing JIT-compilation subsystem for Rotor 2.0  
 Sophia Chillingarová, October 2006 **OOPSLA '06: Companion to the 21st ACM SIGPLAN symposium on programming languages, and applications**  
**Publisher:** ACM Request Permissions  
Full text available: Pdf (184.57 KB) Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 6, Downloads (12 Months): 37, Downloaded by 10 users

The poster describes the design and implementation of the optimizing Just-in-time (Rotor) 2.0 virtual machine. This presentation covers overall design of the fast algorithm for the 1st level ...

**Keywords:** CIL, CLI, JIT-compilation, Rotor, SSCLI, optimization

- 9 Code generation for just-in-time compiled mobile collector agents  
 John G. Allen, Jesse S. Jin, May 2003 **VIP '02: Selected papers from the 2002 Pan-Sydney workshop on virtual machines** Volume 22  
**Publisher:** Australian Computer Society, Inc.  
Full text available: Pdf (38.50 KB) Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 2, Downloads (12 Months): 13, Downloaded by 10 users

This paper describes MGEN/x86, a toolkit that simplifies the process of generating code for just-in-time (JIT) compilers for the x86 series of processor. MGEN produces assembly language code based on a user-defined sequence ...

**Keywords:** JIT, assemble, collector, compiler, mobile, x86

- 10 Attacking the semantic gap between application programming language and hardware  
 Greg Snider, Barry Shackelford, Richard J. Carter, February 2001 **FPGA '01: Proceedings of the 2001 ACM/SIGDA ninth international conference on field programmable gate arrays**

**Publisher:** ACM  [Request Permissions](#)

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It is difficult to exploit the massive, fine-grained parallelism of configuration application programming language such as C, Pascal or Java. The difficulty lies in the synchronous, concurrent processing ...

**11 LLVA: A Low-level Virtual Instruction Set Architecture**

Vikram Adve, Chris Lattner, Michael Brukman, Anand Shukla, Brian Gaeke  
December 2003 **MICRO '36: Proceedings of the 36th annual IEEE/ACM International Conference on Microarchitecture**

**Publisher:** IEEE Computer Society

Full text available:  Pdf (196.08 KB)

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**Bibliometrics:** Downloads (6 Weeks): 2, Downloads (12 Months): 32, Download Rank: 1000

A virtual instruction set architecture (V-ISA) implemented via a processor provides great flexibility to processor designers. Recent examples such as existing hardware instruction ...

**12 Wavelet synopsis for data streams: minimizing non-euclidean error**

 Sudipto Guha, Boulos Harb

August 2005 **KDD '05: Proceedings of the eleventh ACM SIGKDD international conference on knowledge discovery in data mining**

**Publisher:** ACM  [Request Permissions](#)

Full text available:  Pdf (303.82 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 9, Downloads (12 Months): 80, Download Rank: 1000

We consider the wavelet synopsis construction problem for data stream estimate the data by constructing a synopsis, whose size, say B is much chosen to minimize a suitable error between ...

**Keywords:** streaming algorithm, wavelet synopses

**13 Design of the Java HotSpot™ client compiler for Java 6**

 Thomas Kotzmann, Christian Wimmer, Hanspeter Mössenböck, Thomas Rödler

May 2008 **Transactions on Architecture and Code Optimization (TACO)**

**Publisher:** ACM  [Request Permissions](#)

Full text available:  Pdf (1.14 MB)

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**Bibliometrics:** Downloads (6 Weeks): 40, Downloads (12 Months): 433, Download Rank: 1000

Version 6 of Sun Microsystems' Java HotSpot™ VM ships with a redesigned compiler that includes several research results of the last years. The client configuration used by default ...

**Keywords:** Java, compiler, deoptimization, intermediate representation, register allocation

**Application of a multi-criteria simulation optimization based DSS**

A. Azadeh, S. F. Ghaderi, A. Dabbagh, M. Dehghanbaghi

July 2007 **SCSC:** Proceedings of the 2007 summer computer simulation**Publisher:** Society for Computer Simulation International

Full text available: Pdf (209.58 KB)

Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 4, Downloads (12 Months): 43, Download

In this study we propose a decision support system for a textile dyeing, proposed simulation model itself, enables managers to find a schedule combination of decision parameters) ...

**Keywords:** goal programming, metamodel, multi-criteria decision making, quantitative factors

**15 QVM: an efficient runtime for detecting defects in deployed systems**

Matthew Arnold, Martin Vechev, Eran Yahav

 October 2008 **OOPSLA '08: Proceedings of the 23rd ACM SIGPLAN conference on object-oriented programming, systems languages and applications****Publisher:** ACM 

Full text available: Pdf (917.15 KB)

Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 27, Downloads (12 Months): 246, Download

Coping with software defects that occur in the post-deployment stage is only when the system uses a specific configuration and only under certain production systems until the ...

**Keywords:** algorithms, reliability, virtual machines

Also published in:

October 2008 **SIGPLAN Notices** Volume 43 Issue 10**16 FlightTracker: A Novel Optical/Inertial Tracker for Cockpit Enhanced**

Eric Foxlin, Yury Altshuler, Leonid Naimark, Mike Harrington

November 2004 **ISMAR '04: Proceedings of the 3rd IEEE/ACM International Conference on Augmented Reality****Publisher:** IEEE Computer Society

Full text available: Pdf (410.78 KB)

Additional Information: [full citation](#), [abstract](#)**Bibliometrics:** Downloads (6 Weeks): 10, Downloads (12 Months): 69, Download

One of the earliest fielded augmented reality applications was enhanced projected on the pilot's visor provides geo-spatially registered information about obstacles, maintain situational ...

**17 A novel approach for flexible and consistent ADL-driven ASIP design**

Gunnar Braun, Achim Nohl, Weihua Sheng, Jianjiang Ceng, Manuel Hohenauer

Leupers, Heinrich Meyer

June 2004 **DAC '04: Proceedings of the 41st annual Design Automation Conference****Publisher:** ACM 

Full text available: Pdf (204.60 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 7, Downloads (12 Months): 33, Download

Architecture description languages (ADL) have been established to aid t instruction-set processors (ASIP). Their main contribution is the automa including C compiler, assembler, linker, ...

**Keywords:** ADL, ASIP, embedded processors

- 18** Scratch-pad memory allocation without compiler support for java app

Nghi Nguyen, Angel Dominguez, Rajeev Barua  
September 2007 **CASES '07:** Proceedings of the 2007 international conference on synthesis for embedded systems

**Publisher:** ACM

Full text available: Pdf (323.73 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 7, Downloads (12 Months): 73, Download

This paper presents the first scratch-pad memory allocation scheme tha interpreted-language based applications. A scratch-pad memory(SPM) i replaces the hardware-managed cache. Its ...

**Keywords:** JIT, JVM, compiler, embedded systems, java, memory alloc

- 19** LLVM: A Compilation Framework for Lifelong Program Analysis & Tr

Chris Lattner, Vikram Adve

March 2004 **CGO '04:** Proceedings of the international symposium on Code directed and runtime optimization

**Publisher:** IEEE Computer Society

Full text available: Pdf (256.90 KB)

Additional Information: [full citation](#), [abstract](#)

**Bibliometrics:** Downloads (6 Weeks): 32, Downloads (12 Months): 190, Download

This paper describes LLVM (Low Level Virtual Machine),a compiler frame lifelongprogram analysis and transformation for arbitrary programs,by p compilertransformations at compile-time, ...

- 20** Concurrent GC leveraging transactional memory

Phil McGahey, Ali-Reza Adl-Tabatabai, Richard L. Hudson, Vijay Menon, Bill Pugh  
February 2008 **PPoPP '08:** Proceedings of the 13th ACM SIGPLAN Symposium on programming

**Publisher:** ACM

Full text available: Pdf (470.71 KB)

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We predict that the ever-growing number of cores on our desktops will programming. Two technologies are likely to become mainstream in res superior programming model to traditional ...

**Keywords:** compiler optimizations, concurrent garbage collection, stron transactional memory, virtual machines

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